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School Health Problems

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SCHOOL health problems revolve around three general areas—health service, health instruction, and healthful school living. These phases of school health exert influences on the health of the school child that ultimately affect his future as a citizen in the community. All three of these areas are vitally important. I wish to discuss them separately but it should be distinctly understood that they should not be thought of as separate entities with lines of demarcation between them. They are closely associated, and successful programs of school health are attained only through careful integration and correlation. Let us consider health service first.

There are two major objectives in any school health service program: protection against the individual or group that may be a potential menace to others, and preservation and promotion of the health of the individual child. The responsibility for these functions rests primarily upon an organization or a group of organizations interested in promoting public health and actively engaged in such functions. It is a logical and sound practice that in school systems this responsibility for health service should best be the responsibility of a health agency. In Detroit, and I believe also in certain cities in Canada, the logic of such reasoning is in active practice. I realize fully that this philosophy regarding health service is not universal. Many places believe that such service is the function of the board of education. There are some rather sound arguments for this policy, but recognizing that a public health department is charged with the protection

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of the health of the community and that the school is an integral part of the community, it seems more logical that the department of health should include the school in its community health service program.

Regardless of where the health responsibility for school children lies, the fact remains that millions of dollars are spent annually to further their education. In order to utilize these educational facilities most efficiently, the learning child should be in the best of condition physically and physiologically as well as in good social and emotional health. Freedom from defects and illness removes some of the most important handicaps of a child's educational progress.

How the health of the school child shall be protected and promoted is a procedure that has many variations. Traditionally, a great deal of the responsibility has fallen upon the school staff, which has assumed much of the responsibility for the control of communicable diseases, detection of physical defects, and the follow-up and correction of such defects. The school physician has been set up as a supreme authority on defects and the need for their correction. In order to comply adequately with the many responsibilities that he supposedly fulfils, he should be an ophthalmologist, an otolaryngologist, an orthopaedist, a cardiologist, a dermatologist, and a dentist among other things.

The question is raised as to the necessity and even the advisability of following this procedure in school health. Is it possible to impose upon one physician or a group of physicians the entire responsibility for the health of a group of school children? In this day of specialization, are school physicians in as good a position to pass upon on the health needs of children as we once maintained, or are they just good responsible physicians of the community with a good knowledge of medicine?

The answer probably is that among school physicians there are the good, the average, and the poor, as there are among private practitioners of medicine. The private practitioner has the advantage, however, in that he has, as a rule, a broader knowledge of medical practice. If he is the family's physician, he has knowledge of the familial characteristics of the child as well as of the child's past illnesses and injuries.

A great deal has been said and written about the high incidence and correction of physical defects among school children. It is true that these figures have been and can be used as a forcing wedge at budget time. It is open to question, however, whether the success or adequacy of any school health service program can be measured by the incidence and correction of defects, or by the number of children protected against smallpox or diphtheria. The failure or success of the community health program, however, is indicated by these things.

When a child enters school with a physical defect that has not been corrected, the fault does not always lie with the individual family. In certain instances the family may have knowledge of the existing defect and an appreciation of the need for correction, but is unable, due to financial reasons, to secure such care. The recognition of this defect and even its correction upon entrance to school or at some subsequent date, do not alter the fundamental condition that allowed the persistence of the uncorrected defect. Certainly we do not consider the neglect of physical defects and the delay of immunization procedures

as good medical practice. Yet this condition does exist, and each year we recognize cases of progressive myopia, rheumatic heart disease, correctable orthopaedic defects, correctable foci of infection, and many other similar conditions among new enrollees.

If the traditional school health service has not actually contributed towards this deficiency, it has at least done very little about correcting the condition. The rendering of unlimited or even moderately limited medical service in schools has not materially aided in the elimination of this condition. On the contrary, it has encouraged family dependence upon the school for medical service. Too frequently, for the period of time that the child is in school he becomes the ward of the school in matters pertaining to health and is taught to turn to teachers, nurses, and school physicians for medical advice and even medical service.

The greatest single contribution that school health activities can render the child or family is an educational one. This cannot be attained unless child and parent become more self-reliant in the maintenance of health. It becomes the function of health departments and boards of education to plan co-operatively for a school health program that educates as well as serves. There are two approaches to this problem, one through greater teacher participation in determination of deviations from the normal among school children, and the other through the enlistment of the family physician in the program.

Teachers, with a minimum of instruction, can be trained to detect gross physical defects. Furthermore, this can become a valuable educational experience for children. All public school children in Detroit not having secured an examination from their private physician, are screened annually by teachers for gross physical defects. This program has been in operation for twenty-four years. Periodic analyses have shown better than ninety per cent correlation between the teachers' findings and rechecks by physicians. Such a program has served the child, parents, and community well and has helped materially in solving some of the health problems. This sort of program automatically relieves school physicians from wholesale examinations and allows them to concentrate on examinations of children with the more obvious defects, facilitating a commensurately better follow-up for corrections.

The second aspect of this educational approach to the solution of the health examination program, that of securing more examinations through the family physician, has also been found effective. In Detroit, children entering the elementary school for the first time, new entrants to junior high school, new entrants to senior high school, and also twelfth-graders are encouraged to secure examinations from their private physician. This procedure was inaugurated in 1934 when 2,000, or about 18 per cent, were so examined. In 1944, over 50,000 went to their private physicians for examination. This represents better than 50 per cent of the new enrollees.

Such a program is educative for boys and girls, parents, and physicians. Students and parents learn the value of periodic health check-ups, they learn self-reliance in the use of community resources for health maintenance, and they become increasingly less reliant upon the school for health service. Physicians in the community become more fully aware of school health problems and more

sympathetic toward them. Incidentally, they become more conscious of the need for preventive health through greater opportunity to advise both child and parent in positive health practices. Too frequently, private practitioners have to think almost solely in terms of pathology. In their average day-to-day practice they seldom examine a well person or one with slight deviations from the normal. Most of us rarely call a physician unless we are really ill.

The need for educating the family physician as to what constitutes a good school health examination has been shown through surveys of such examinations as conducted by private physicians over a period of several years. The returns from questionnaires sent to various schools in Detroit show the following data:

RESULTS OF COMPOSITE TABULATION

	1936	*1940*	*1944*
Total number of children questioned by department heads	308	354	322
Total number of physicians who gave examinations	288	339	243
Per cent of students stating examinations were thorough and satisfying	35%	54%	65%
Per cent of students stating that vision was not tested	29%	18%	13%
Per cent of students stating that blood pressure was not taken	22%	10%	05%
Per cent of students stating that hearing was not tested	19%	16%	06%
Per cent of students stating that no examination for hernia was given	09%	05%	05%
Per cent of students stating that the physician did not give any examination because he was the family physician and knew the student	04%	01%	01%
Per cent of students stating that the physician examined the oral cavity only	01%	01%	00%
Per cent of students stating that the physician examined the heart and lungs only	01%	01%	01%

Two students in 1936 stated that their mother took the form to the family physician to be filled out. Four students made the same statement in 1940. None made this statement in 1944, but one student stated, "Nurse checked me, did practically nothing."

Discrepancies still occur frequently in recording. In fact, these and the physician's handwriting (!) seem to be the most serious criticism of the examination. Failure to follow the code on the form and failure to write legibly nullify the effectiveness of the examination program, as the findings are used, among other things, as a guide for teachers in planning intelligently the physical activities of the student.

Some Verbatim Statements by Students

"Dr. ——— was in too much of a hurry."

"It cost a lot."

"The doctor knew me too well to examine me."

"Mother felt my examination was no good so she sent me back to Dr. ——— and asked him to really examine me—not just make out a slip."

"Just asked questions—no examination of any sort."

"He asked me if I was color blind or if my eyes bothered me and then marked them O.K."

"He 'zipped' through the examination."

"Copied from Army findings."

"He only listened to my heart. 'Lousy' examination."

Conclusions

1. There has been a consistent improvement both in the thoroughness of the examination and in the recordings but there is still opportunity for further improvement, as is evidenced by the results of the composite tabulation and by some of the verbatim remarks made by students examined.
2. There should be continued emphasis on the necessity for careful vision tests. Physicians seem inclined to leave these to the teachers, though it is not their responsibility to make such examinations. They may screen for gross defects, but the entire burden of testing vision should not be placed upon them.
3. It must be re-emphasized that teachers are dependent upon the results of physical examinations in adjusting the students' programs, hence the need for complete and *accurate* information.
4. There is satisfactory evidence of finer co-operation between the schools and the private physicians. This is the ultimate goal toward which we are striving. This present survey was conducted to improve the relationship still further.

Consistent with the general philosophy of emphasizing the educational aspects of health service, there is evidence of shifting emphasis on the functions of the school nurse. Not so many years ago the duties of a school nurse were confined largely to administering first aid. She is now more concerned with the improvement of the general school health program and takes her place beside the principal and teacher in this effort. Again, if we subscribe to the point of view that the school is an integral part of the community, the school nurse's duties embrace the home as well as the school and she becomes a family nurse serving the family whether its members be in the home or in school. In other words, she acts as a liaison officer between the home and school. The result is that she has a better knowledge of the individual child, knows more about the family and the district, and can make that knowledge available for use by the teacher.

Much of the school nurse's work is in helping the family to have its children in good health when they enter school. This program starts with the newborn baby and continues at stated intervals, resulting in protection through immunization and vaccination against communicable diseases, advice regarding nutrition, emphasis on regular visits to the physician for prophylaxis, correction of remediable physical defects, tuberculin testing, dental care, reinforcing doses of toxoid, etc. All of these helps and protective devices are vitally important because, whereas there is a law compelling a child to enter school at a certain age, unfortunately there is no law that says he must be in a condition to be taught. The effectiveness of this program, as is the case with all other phases of school health, depends largely on a fine working relationship between the nurse and the home; the nurse and the principal; the nurse and the teacher.

Health Instruction

As stated previously, the step from health service to health instruction or health education is a short one. Perhaps it should not even be spoken of as a step but rather as a fusion. Even though a board of health may be charged

primarily with the responsibility of a school health service program and the board of education with the health instructional aspects of school health, the two departments must coalesce to attain the ultimate good from both programs. This is a fundamental concept even though the teachers are assuming major responsibility for health instruction.

In discussing this second area around which many of our school health problems revolve, I wish to point up the difficulties encountered in the establishment and functioning of a sound health instruction program. The solution should be obvious as the problems are analyzed even if such solution is difficult of attainment.

There has been considerable administrative laxity in the past. Lip service has been given quite volubly, even to the extent of indicating health as the first cardinal principle of education. Then it has been sidetracked or utterly ignored in favor of other more traditional subjects in the curriculum. This has been obvious through failure to allot adequate time for health instruction, failure to supply proper teaching aids and facilities, and failure to budget money for the employment of properly trained teachers. It is true that such teachers are not easily obtainable but if the demand were great enough they would be.

This apathy on the part of the school administration is mirrored among parents and in the community. For generations school curricula have reflected the wishes of contemporary society and have followed its edicts. Schools have always had indifferent success in shaping community life or in affecting the thinking of its constituents. This is frightfully apparent in school health education programs.

In contradistinction to parental and community pressure for a sound school program in health, there are many maleducative and misleading forces in the community that undermine much of the good that is attempted in our public schools. You have only to read the health advertising in the daily papers and in the periodical magazines, and listen to it on the radio to be convinced of this. If schools had a fraction of the money spent in advertising dubious "cure-alls" they could do a spendid job in scientific health teaching.

Unfortunately for those of us who are deeply concerned with supplying boys and girls with accurate and scientific health knowledge, the lay public accepts statements regarding health made over the radio, for example, altogether too gullibly. A dissertation[1] on the validity of radio health information has recently been published at Temple University in Philadelphia. It is an exhaustive and excellent analysis of the problem and I commend it to you for careful study. Two hundred and thirty-six radio statements on health were used as a basis for the author's study. Her findings and conclusions are as follows:

Findings

1. Of the judges who evaluated the statements used in the radio commercials of the selected products, the experts rated only 6.36 per cent of the statements

[1]Duncan, Gertrude I. *The Validity of Health Information Gained Through Radio Advertising.* Philadelphia: Temple University, 1944. Price $1.00.

to be true, the health education teachers judged 6.78 per cent to be true, the unselected graduate students 11.86 per cent, and the laymen 41.53 per cent.

2. Of the fifteen statements found true by the experts, 86.70 per cent related to health, 6.65 per cent to the respiratory functions, 6.65 per cent to pain relief, and 00.00 per cent to care of the skin, hair, and teeth.
3. The percentages of statements rated true by all judges were distributed among the product groups from highest to lowest, as follows: digestive functions, 74.73 per cent; skin, hair, and teeth, 12.37 per cent; general health, 9.17 per cent; and respiratory organs, 3.69 per cent.
4. Of the groups of judges the laymen alone found some statements true in relation to every product group.
5. The percentages of statements rated as doubtful were as follows: graduates, 63.14 per cent; experts, 58.45 per cent; laymen, 51.27 per cent; and teachers, 40.68 per cent.
6. The percentages of the statements rated as false were as follows: health teachers, 52.54 per cent; experts, 35.16 per cent; graduate students, 25.00 per cent; and laymen, 7.20 per cent.

Conclusions

1. In the main, the statements employed by advertisers in relation to the products studied are regarded either as false or as of doubtful validity by the experts and graduate students.
2. The statements or claims made in connection with products designed to improve digestion and elimination show the highest degree of validity, those relating to care of the skin, hair, and teeth, the lowest degree of validity.
3. There is a negative relationship between educational status and acceptance of radio advertising.
4. Generally speaking, claims made regarding different product groups are given a higher rating on the credibility scale by those of low socio-economic status (skilled and unskilled workers) than by those of high socio-economic status (professional men and women).
5. Present advertising appears more effective in its relation to those of lower educational and economic levels (skilled and unskilled workers).
6. The experts and health teachers show less variability in their rating of advertising appeals, reflecting greater uniformity of background and understanding.
7. That statements relating to the skin, hair, and teeth are less reliable than those of any other group is evident not merely from their lower rating by experts but also in the high variability of the ratings by laymen.

For a fraction of the money spent on radio health advertising it would also be possible to bring school health materials up to date. Unfortunately, many school textbooks on health *are* out of date. Scientific data on preventive aspects in the field of health change rapidly. A book on health written this year may, by next year, contain out-of-date information, but such books are usually adopted by boards of education for use over a certain period of years. The cost for frequent and periodic replacement is prohibitive.

In the use of the instructional materials that are available, teachers have too frequently erred in demanding too much health knowledge without placing enough emphasis on habits and attitudes. Health knowledge is more readily measured than habits and attitudes, and teachers have been content if children have assimilated enough health facts to get a passing grade. Whether or not such knowledge has been applied has been left to chance. Simple proof of this can readily be secured in most schools through a comparison of a child's knowledge of nutrition with *what he actually eats in a school lunchroom.* Similar analogies can be drawn in many other areas, such as knowledge about teeth *vs.* correction of dental defects; knowledge regarding sleep and rest *vs.* actual practice; and knowledge of the value of exercise *vs.* active participation.

This leads us directly to poor examples of health habits and attitudes among teachers themselves. What has been said of children regarding good health practices applies altogether too often to teachers. The "do as I say, not as I do" philosophy is a poor one for the health teacher to follow. There must be precept and example. Boys and girls are impressionable and we never know when or how we are influencing young people through our actions. That we do, is unquestionable because I am sure that each of us can recall instances when graduates of our schools have told us of such influence when they were our students. Children assigned to us for instruction are a sacred trust. This is doubly true when we are entrusted with guiding them into paths which lead toward a healthy adulthood.

Lastly in this area of health instruction may I mention the impact that poor health conditions in the schools themselves have on the health instruction program. Of what avail is it to teach such simple measures in the class as the need for washing hands before going to lunch and after going to the toilet if there is no hot water, no soap, and no towels? Doesn't the value of learning the scientific and sanitary principles regarding drinking fountains or bubblers lose most of its effectiveness when children go out of the health class into the corridor and drink from an obsolete fountain?

Healthful School Living

These are aspects of healthful school living, the third area in a school health program that presents problems. We have less control in this area than in health service and health instruction but we do have the privilege usually of making recommendations regarding basic health principles in building plans and in the administration and organization features of the building. If we do not actually enjoy such privilege, I would suggest an aggressive interest in healthful school living until it is granted. This may be at the expense of becoming unpopular with some school administrators who dislike being stirred out of their smug complacency but the ends justify the means.

What are some of the phases of healthful school living which should be of concern to us? I have mentioned sanitary drinking fountains and adequate facilities in lavatories for cleanliness. We should also be concerned with problems of heating, lighting, and ventilating, keeping in mind that schools are built for children and their comfort and, we hope, for the maintenance and improvement

of their health. They are not designed to meet the personal idiosyncracies of those of us who are allergic to fresh air and whose blood is thinning. There are standards for lighting school rooms, heating them, and ventilating them. These should be maintained.

There is an increasing tendency among medical men to recognize the dangers of air-borne disease. Every effort should be made to maintain building cleanliness and to eliminate dust. This is, of course, the *function* of the engineering or janitorial staff but it is the direct *concern* of the health teacher.

The school lunch has been receiving greater consideration during the last few years. It should be tied in much more closely with health instruction than has been the case hitherto. It offers splendid opportunities for the practical application of knowledge about nutrition. The lunchroom management should work co-operatively with those charged with the responsibility for health teaching. There are many techniques that are being followed in correlating the two programs and a great deal of literature on the subject is available.

Careful programming of the school-child's day is also within the realm of healthful school living. The physical, mental, and emotional life of the boy or girl may be seriously jeopardized through careless arrangements of his or her schedule. Instances of poor programming include the scheduling of gymnasium or swimming activities too soon after lunch; several consecutive hours of difficult academic subjects; disregard of distances up and down stairs that a student with a cardiac condition may have to travel between classes; and inadequate time for lunch. These may result not only in physical strains but in mental and emotional as well. In this general discussion of school health problems, little has been said about mental and emotional health. These phases of health are vitally important but it is not possible to discuss them in so limited a length of time. We all recognize that health service, health instruction, and healthful school living make contributions not only to physical health but to mental and emotional as well. The alert worker in school health will not fail to emphasize all three of these in his program.

Instead of summarizing this discussion I would prefer to give you in a couple of sentences what appeals to me as a sound program for the future.

First, utilize all three areas of school health to protect and improve the health of the school child, building such a program around his everyday living experiences. This is one way through which proper habits and attitudes toward health may be inculcated.

Second, give him as much scientific factual knowledge on the various grade levels as may be necessary to establish good basic attitudes toward health.

This sounds simple enough but its actual accomplishment is contingent upon the solution of the problems revolving around the three areas discussed.

Housing

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NO one subject is attracting more general interest to-day than improved housing. Thanks to the educational work that has been done both by national and local organizations in various communities, there has been a growing recognition that every individual should have a decent place of abode; that there is a definite shortage of houses; that without help in some form a large number of families cannot possess proper homes and that aid will have to be provided. For years there were many people who could not see any reason why they should take an interest in the housing of the less fortunate. However, a more intimate knowledge of conditions, both from the social and economic viewpoints, has resulted in a more favourable and active interest by the public generally.

There is no city, town or village but what possesses dwellings that are a disgrace to modern civilization. They have passed their stage of usefulness but remain as tombstones of the pioneer days. In addition, whole districts are made hideous by the surroundings. Old shacks, broken-down fences, billboards, etc., contribute to the undesirable aspect.

We can divide our population into five groups, viz., those who can afford to purchase homes; those who cannot afford to buy new homes but can pay rental charges; those who have neither the ambition nor the desire to buy a home; those who, due to low wages and other circumstances, can afford to pay only a nominal rent; and those misfits who have neither ambition nor thrift and generally are a menace to decent society.

The families in the last two groups therefore reside in slum areas; that is, areas consisting largely of obsolete dwellings in disreputable condition. As previously stated, these areas are usually those that were formerly occupied by a much higher income group, but owing to the encroachment of commerce or industry, have become undesirable as residential areas. The buildings have not had the necessary repairs and have become obsolete. Possibly the land has increased in potential value to such an extent that the owners would not increase their return on their investment by improving the existing buildings for residential purposes. This is low-rental property and consequently the dwellings are occupied by families who eventually are, in a large measure, responsible for increased crime and juvenile delinquency. The cost of hospitalization, etc., eventually assumes large proportions.

Since the beginning of the war there has been a large influx of families from rural to urban districts and also from small towns to cities where additional work connected with the war effort is found. These families may return to the

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rural districts when the war is over but to what extent is problematical. In the meantime there is greater congestion and overcrowding than previously existed.

In the City of Winnipeg, which has a population of 228,548, there are 36,838 houses. Dwellings in connection with stores number 992 and suites in apartment blocks 11,369. The total dwelling units are 49,199. This gives an average of 4.6 persons per housing unit. If the population was housed according to this average, conditions would be satisfactory. This is not the case, however. During the past five years there were 13,637 marriages, but only one dwelling unit was provided for every five marriages. Consequently several families are obliged to reside in dwellings which were intended for one family.

During December 1943 we surveyed 656 dwellings and found them to be occupied by 1,173 families—a surplus of 517 families. We estimate that the shortage of housing units is 9,000, based on 25 per cent of the total dwellings units available. Five hundred and eleven permits for new houses have been issued in 1944 but some of these will not be completed this year.

Several years ago sixteen organizations in Winnipeg participated in a general survey and investigation of certain social conditions. The results were tabulated by Mrs. McWilliams, then chairman of the Health Committee, and Mr. Lawrence, secretary of the Department. Two areas were compared to the rest of the city, with the following results:

	Area 1	*Area 2*	*Rest of City*
Population	29,479	23,246	170,292
Number of children 1-16 years	6,398	6,440	52,093
Infant mortality per 1,000 live births	58.5	52	42.5
Cases of scarlet fever and diphtheria per 1,000 child population	433	503	1,949
Deaths from pulmonary tuberculosis per 10,000 population	65	89	239

It will be seen that the deaths from pulmonary tuberculosis were approximately 100 per cent higher in Area 1 than in the rest of the city, and were 250 per cent higher in Area 2.

The annual cost to the citizens for hospitalization is exceptionally interesting. In Area 1 the cost, per 1,000 population, was $825; in Area 2 it was $1,608; and for the rest of the city it was $593. The number of juvenile-court cases is also worth recording. Area 2 had 100 per cent more cases than the rest of the city, and Area 1 had 50 per cent more.

Area 1 is recognized as a rooming-house district. Until a few years ago the majority of the houses were occupied as single-family dwellings; today they are sublet for light housekeeping. There is an unvented gas range in most of the rooms and the average occupancy per room is about 1.9 persons. Fully 90 per cent of the houses have only one water-closet, one bath and wash-basin, and at the present time these fixtures will have to accommodate twenty persons—both male and female. The wage per household head will average about $90 per month. The average rent per room is $11.50 plus gas-range costs.

The houses in Area 2 are about the same age as those in Area 1 but are in a more dilapidated condition. Moreover, it was a potential industrial district but has not developed as anticipated. Considerable speculation occurred, with the

result that few repairs were made, rents were comparatively low in consequence and taxes were comparatively high. While there still remain a few well-kept homes, the majority are occupied by low-wage earners. The environment as a whole is not conducive to decent living and slum conditions are rapidly being developed.

Sixty per cent of our buildings in Winnipeg are thirty years old or over, and there are more than two thousand houses in this group which were built fifty years ago. There are, therefore, many replacements to consider. Rehabilitation of many of these dwellings will help our housing situation considerably, but it is very doubtful if any of the dwellings fifty years old will be worth the expense involved.

Each year our inspectors conduct a survey of vacant houses and suites. Our survey of December 1943 gave 55 vacant houses; 35 were fit for occupation without or with slight repairs, but 21 of these were for sale only. The percentage of vacancies was 0.14. There were only 12 vacant suites (0.1 per cent).

The housing shortage throughout the Dominion is not temporary, although there is no doubt that after the war there will be an exodus from many cities which are at present unduly overcrowded.

Wages during the past five years have, in many instances, been increased and many have been given a cost-of-living bonus. Is it reasonable to assume that the additional money or a fair percentage of it will be used for the purchase of homes? There is no denying the fact that in very many instances the purchase of a home has been only a secondary consideration; many prefer to rent. Will the future bring an era of prosperity to the investor and will the low-paid workers still be obliged to rent homes which should be demolished? There is no gainsaying the fact that it is the low-paid worker who requires far more help and consideration than he has had in the past. This aid will have to be given by some governing body, either Federal or Provincial. Those now in the fighting forces will expect more practical encouragement than they received after the termination of the last war. It is to be regretted, in my opinion, that the Federal Government or the Provincial authorities did not develop some scheme whereby decent working-class homes, to be rented at a nominal cost, could have been erected during the past twenty years. Over four million homes were erected in Great Britain and about one third of these through public aid. Later, local government shared part of the expense. The United States loaned considerable money to the various cities for home construction. A considerable proportion of the money spent was for homes for low-paid workers and others of moderate means. Sweden appeared to be one of the foremost to help in providing homes. The government paid one-third of the cost for the construction of the cheaper homes and loaned the remainder of the money at 4 per cent. Prior to the war, various organizations in Holland loaned 100 per cent of home construction costs with an amortization period of fifty years. This would undoubtedly result in considerable loss.

In Winnipeg,—and I expect the same conditions prevail in Toronto and other cities—it is practically impossible to obtain either a house or a suite.

Families with a moderate income and the accepted low-wage earner cannot obtain even fairly decent accommodation. Those families with children are in a much worse predicament. For the past seven months I have had the onerous responsibility of obtaining rooms and houses, if possible, for citizens who were under notice to vacate. In practically all instances the dwellings rented had been purchased and a fairly large proportion of the new owners came from outside municipalities. The occupation by the new owner resulted in the eviction of sometimes two and three families. Considerable hardship has been and is being caused to many families where the father is on active service. Perhaps this is the reason why I may appear to be prejudiced. Mothers of the children have searched for days and even weeks to obtain rooms, only to be refused decent quarters. That is why, in my opinion, housing should have been frozen two years ago; there would have been less hardship and less resentment against the various authorities than prevails at the present time. I must say, however, that excellent co-operation has existed between the court officials and the city authorities. To my knowledge, no family has been evicted for some considerable time, suitable premises having been eventually found for them. There are several families with five and six children, several of whom have to be cared for in a public institution owing to our inability to house them together.

No matter to what extent aid is given by government or local authorities, there will remain for some considerable time certain individuals who require aid in some form or other.

This brings us to the point where the solution of the housing problem becomes complex. We, who are interested in the construction of new homes and improvement in the environment of the general public, know what constitutes decent housing, but there are other matters of an economic nature that must also be considered. Not only that, but any action by the Government in this regard must be suitable for all parts of the Dominion. Due to climatic conditions the cost of home construction in Western Canada is much higher than in the East. An average four-room cottage, fully modern, constructed in Winnipeg to-day costs from $4,300 to $4,500. Dwellings which were built twenty-five years ago are being sold for more than, or as much as, the original cost. You will recollect, no doubt, that Order 200 of the Wartime Prices Board cancelled temporarily the zoning regulations of local authorities. It allowed the occupant of any home to sublet any accommodation he did not require for his own use. Now this order has certainly been a factor in providing housing for the influx of individuals and families of workers and servicemen. This is one reason, though, that so many houses are being sold at the present time at high prices; the idea being to create a sufficiently large revenue to cover the original down payment and mortgage and return the premises to the original owner on eventual foreclosure. At the present time, however, a comparatively large down payment is required.

In my opinion, many of these dwellings will be returned to the original owners in such condition that complete rehabilitation may prove too costly and this will result in a general deterioration of the locality. It will mean reduced

rents and perhaps the commencement of a physical aspect not conducive to the maintenance of an otherwise excellent neighbourhood. Local authorities will be responsible for considerable expense in checking these zoned areas and requiring reversion to single family dwellings. Many illegally installed plumbing fixtures will be found and technicalities of a legal nature will be encountered, many of which will not be decided to the advantage of the authorities concerned.

Now as to future home construction, authorities have already decided and are already practically engaged in the preparation of plans for the post-war era. This plan not only includes home construction and improvements but a general alteration in former methods of haphazard town development. This is known as town planning. Housing and town planning are really synonymous terms. When we speak of good housing we consider the subject as a means whereby the residents of any given area or locality are provided with the facilities to enjoy life in a healthful environment; or, in other words, providing a better place in which to live, both socially and economically. Any effort, therefore, to improve the housing conditions must include the provision of parks, playgrounds, etc. In addition, cognizance must be taken of the necessity for dealing with older houses when constructing new homes. Here in Toronto there is an excellent by-law which requires that every home shall conform with certain standards and, further, gives such power to the authorities to compel the required improvements to be made. While the City of Winnipeg has a rehabilitation by-law, it is not satisfactory for the reason that it applies only to buildings which are structurally sound but uninhabitable. Now these homes, as previously stated, are the only units available for the low-paid worker. Who is this low-paid worker and who is considered financially unable to purchase a home or pay even a nominal rent? Quoting from a report issued by the Winnipeg Council of Social Agencies in 1943, we find that 19 per cent of households were overcrowded or 19 per cent provided less than one room per person living in them. At that time this was the average condition existing in the twenty-seven cities of over 30,000 population throughout Canada. The income position of those living in Winnipeg, however, was relatively poorer. This is shown by the fact that the mean income of the wage-earner heads of families living in these conditions in the twenty-seven cities was $1,100 per year, whereas in Winnipeg it was only $942. There were only two cities, viz. Hull and Saskatoon, with an income group lower than that of Winnipeg. During normal times about 60 per cent of the average family earnings throughout Canada will be less than $1,200 per year. One-fifth of the wages for rent is the general accepted amount. This leaves on the average less than eighty dollars per month for the necessities for probably six or seven persons.

The estimated number of homes required throughout Canada varies considerably. As I previously stated, we estimate a total of 9,000 homes to be required in Winnipeg. The total for the Dominion is placed from 250,000 to 500,000. The majority of these homes will be required by the low-paid worker and how these homes are to be constructed to rent at $20.00 per month and less is the problem.

It must be remembered that construction in Western Canada is more expensive than in the East. We have much lower temperatures to contend with during the winter months and sub-soil conditions necessitate more substantial foundations. It is evident, therefore, that if the present building by-law regulations are adhered to, a subsidy in some form will be required. On the other hand, if the homes are constructed in isolated districts where transportation is poor and public improvements have not been made, we shall only be encouraging the type of housing which we are trying to prevent. The whole set-up appears to rest on some authority, local or otherwise. To construct homes for rent is not, according to financial authorities, a paying proposition.

The system of family allowances which comes into force next July may be the means for providing additional nutritional elements and clothing for children, but I doubt very much if it will improve the present housing conditions.

It appears to me that there is something wrong in a democracy when adequate wages, sufficient for a decent existence, cannot be obtained. That is not the whole problem. There is not adequate housing even for those who can afford a reasonable rent. It appears to me that, since this condition affects the whole of Canada, it is a Federal Government affair. While I do not advocate crippling in any form the financial set-up of the building industry, it is imperative that building costs be reduced by some method of regulating the cost of materials or that some form of subsidy be provided.

The loaning of money for the erection of homes for rent at a low rate of interest with a long amortization period does not solve the problem, but in instances of construction for sale it would be of considerable help although of doubtful financial policy.

The provision of temporary housing is not satisfactory. Dwellings may be classified as temporary but they are apt to remain and in a short period become another blot on future housing. The cost of a temporary habitable dwelling is very little less than one of permanent construction.

The new Federal housing act which is not yet operative (except in Melville, Saskatchewan) will provide for increased loans by the Government at a slightly lower rate of interest. This may induce the formation of local housing authorities who will eventually construct multiple units at a lower cost than would be possible if separate units were built.

At the present time, however, I am unable to visualize the construction of low-cost homes—that is, homes for rent at from $15 to $20 per month. The cost of materials is high, material is not plentiful, and there is a definite shortage of labour. The past twenty years could have been well spent in a more active construction program. Although the housing situation in Winnipeg has been very acute for the past twenty years, only 7,673 houses and 3,536 suites —a total of 11,209 units—were provided. During that period there were 39,000 marriages. During the same period there was an estimated population increase of 45,170. The low construction years extended from 1934 to 1937 inclusive. During this period only 446 units were provided.

We must not overlook the fact that hundreds of men on active service will return from overseas with their families. What housing have we to offer them?

The Development of Dietary Standards

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THE Hot Springs Conference on Food and Agriculture (May, 1933) recommended that each country improve its food supplies in accordance with the needs of the whole population and that "the ultimate goal of their food and nutrition policy [should be] dietary standards or allowances based upon scientific assessment of the amount and quality of food, in terms of nutrients, which promote health." It was further suggested that this ultimate goal should be distinguished from more immediate goals "which necessarily must be based upon the practical possibilities."

Solutions for the problems of nutrition will differ nationally and internationally depending not only on the goals established but even more on finding practical approaches to those aspects which are mainly responsible for the present low levels of nutrition in many parts of the world—production, distribution and education. In Canada, where a relatively high level of nutrition exists and where production is already adequate in many respects, emphasis is needed on distribution in accordance with needs, and on education.

Dietary standards are needed, however, for both national and international discussions on food. Since future food policies must also be related to consumer protection through such means as a Food and Drugs Act, it is also desirable that dietary standards be integrated with the operation of such acts. In our present state of limited knowledge concerning nutrition it is important to review the evidence frequently, and to have a broad working hypothesis on which to fit new knowledge as acquired. Such a framework has been lacking and has led to some confusion. In fact, no dietary standard in current use is considered to be completely suitable from the standpoint either of representing scientific knowledge or of the uses to which it has been put. This situation becomes understandable on critically reviewing the history of dietary standards.

HISTORICAL REVIEW

From the very earliest times it has been known that diet in general can influence health and physical fitness, and that certain foods have therapeutic value of a more or less specific nature. In the latter category was the important discovery by Lind that scurvy could be prevented by the inclusion of lime or lemon juice in the diet. The control of scurvy was so important for the economic welfare and defence of sea-faring Britain that the use of lime juice by sailors was made compulsory by the Merchant Seamen's Act in 1835.

Knowledge of the nature and function of food is quite separate from the application of this knowledge, and neither passed this crude qualitative phase until the beginning of the nineteenth century. By this time the development of chemical knowledge and quantitative methods made possible a scientific analysis

of food to determine the number and types of its nutrient principles. It was then discovered that foodstuffs contained three nutrient principles: proteins, fats, and carbohydrates, and that each has a distinct role in the nutrition of the body. For nearly a century the study of the relationship of these three "proximate principles" to metabolism predominated in the thought of all those concerned with problems of nutrition.

This early knowledge was soon applied in England in the setting up of the first dietary standard in 1862 by Dr. E. Smith (1). Dr. Smith had originally been commissioned to make a study of nutrition among the poorest classes of the population, as part of a larger epidemiological investigation begun in 1858. However, as a result of the cotton famine of 1862, the nutrition work was primarily directed to a dietary survey of the unemployed cotton workers. The express purpose of the resulting dietary standard was to "avert starvation-diseases" among this group. It expressed allowances for adults in terms of carbon and nitrogen, which were then translated into diets and meals composed of the cheapest possible foods.

No useful alternative standard for widespread application was proposed until 1918, when Lusk prepared a statement of energy requirements as a preliminary to estimating "the total food requirements of the United Kingdom, France and Italy as a basis for American exports of food to these countries." This standard was accepted in 1919 by the Royal Society, with additional recommendations regarding the amount of protein and percentage of fat in the diet, as a basis for calculating the food requirements of the United Kingdom. Owing to lack of knowledge about other nutrients, the standards were still primarily for energy.

The economic depression which began in 1929 stimulated several revisions and extensions of the standards with the object of maintaining the health and working capacity of the people. In Britain in 1933 the British Medical Association set up a committee for such a purpose. It is noteworthy that, although similar economic conditions determined the work of both this committee in 1933 and that of Smith in 1862, the advance in productive capacity and related social thinking during this period had been such that the later standards had a considerably higher objective than the mere prevention of starvation.

At about the same time the existence of huge undistributed surpluses of food in a world where inadequate nutrition of all degrees abounded—"starvation in the midst of plenty"—led to proposals for a solution by correlating agricultural production with national or world nutritional requirements. As a prerequisite for such planning, Stiebeling in the United States in 1933 prepared a standard of optimal dietary requirements which for the first time included figures of requirements for calcium, phosphorus, iron and vitamins A and C. (Later vitamins B_1 and B_2 were included.) The Health Organization of the League of Nations tackled the same problem in 1935 and 1936, producing a standard that was somewhat different because a more restricted view was taken of the scientific knowledge considered applicable. This lack of information concerning the quantitative needs, especially of vitamins, was also emphasized in the Canadian Dietary Standard prepared in 1939 by the Canadian Council on Nutrition.

The second World War created the condition for the formulation of the latest standard, the Recommended Dietary Allowances of the Food and Nutrition Board of the United States National Research Council. This table, compiled in 1941, represents the response of nutrition specialists in that country to the need for a program of action to mobilize all the nation's resources for large-scale and protracted warfare. The goal is much higher than any previously sought—"the building up of our people to a level of health and vigor never before attained or dreamed of." The table itself is the most detailed yet devised anywhere, providing allowances for calories, protein, calcium, iron and six vitamins for men and women, and children of various ages. Recent modifications in this table (April, 1945) show that progress is being made in defining food standards. Much remains to be done, however.

Comparisons of the various standards in terms of food constituents are not easy, due to the use of different methods for expressing requirements and to the relative incompleteness of the earlier tables, which were concerned only with energy and protein requirements. Nevertheless, it is possible to deduce the allowances for vitamins and minerals from the diets set up on these early standards, and comparisons then show that, while the allowance for energy has remained almost constant, those for protein and minerals have varied within narrow limits, and those for vitamins show wide differences. Part at least of the discrepancy is due to differences of purpose for which the allowances were devised.

The Role of Dietary Standards in Applied Nutrition

A study of the main objectives of the various standards which have been used for large-scale dietary planning, in relation to their contemporary economic and social background, allows a critical evaluation of the significance of all such standards as instruments in the application of scientific knowledge of nutrition. This study reveals that all such standards have arisen as a direct result of certain national or international situations of a critical nature in which food played a decisive or important role. The specific situations giving rise to widely accepted quantitative standards were unemployment of the English cotton workers (1862), depletion of European food supplies due to war (1918), economic depression and mass unemployment (1929 onward), and the second World War, which has demanded total mobilization of all our resources.

It is thus seen that at intervals scientists are set the task of applying available nutritional knowledge to the welfare of sections of humanity. The first step in the solution of each task is invariably the formulation of a dietary standard, a statement of how much food must be ingested to achieve a desired result (the "purpose" of the standard). The purposes, and hence the standards themselves, reflect not only the contemporary level of scientific knowledge but also, consciously or not, the manner chosen to deal with the problems necessitating them.

Hence, a standard set up for one purpose, for a specific problem, may not be applicable to the solution of another problem. Increasing scientific knowledge may ultimately enable us to state the full role of diet in the prevention of disease and the promotion of health and physical and mental well-being and efficiency.

At present, not only is this not possible, but our immediate tasks for the world at large fall far short of this ultimate goal. Our standards must accordingly be adapted to the provision of freedom from hunger in the immediate post-war world. The widely used Allowances of the United States National Research Council have the most ambitious purpose so far (2, 3). It is indicated that these allowances are designed to be sufficient for maximum health and vigor of *any* individual under any normal circumstances, even though most people in a population would actually need less than the figure stated. Such a complete table requires approximations far beyond the information available, and its appearance of finality tends to discourage much-needed research. It is worthy of note also that the chief use to which the Recommended Dietary Allowances have been put has been interpretation of dietary surveys as a measure of nutritional status. This has led to unjustified statements on the extent of malnutrition.

Uses for Dietary and Nutritional Standards

At present, the purposes for which dietary standards are needed include the following:

1. For use in calculating the nutrient requirements of a population in connection with a national food and nutrition policy for health.
2. For use in evaluating the dietary status of a group of people from the total and average quantities of foods eaten, or providing foods for such a group.
3. For use in establishing regulations under the Food and Drugs Act governing the contents of foods, dietary supplements or drugs and of allowable claims for them.
4. For use in evaluating the dietary status of an individual person from the foods eaten, or from the foods purchased.

It is not likely that a single set of figures in a table could be used properly for all these purposes. Furthermore, as already pointed out, a table has an air of authority and finality which is not only false but may also permit misuse. In our present state of knowlege, no table can be constructed on a basis of well-established evidence (as distinct from opinion and compromise); nor should a table be constructed without reference to the proper method of using it. Nevertheless, it is possible to marshal information about requirements in a manner that forms a uniform basis for various calculations suited to different purposes.

Suggested Basis for Dietary Standards

The following is suggested as a useful method for handling data of human nutritional requirements so that they may be in the best form for the various uses for which they may be required.

Nutrition as a part of public health is concerned with populations, and dietary standards in public health must be related to populations, even while bearing a relationship to individuals. Hence, they should be based on figures obtained from representative samples of a suitable size taken from populations of the type to which they are to be applied, and not based on a few individuals peculiar in that they are healthy young laboratory workers or inmates of a

mental hospital. It should be emphasized here that figures derived in this manner, and thus useful for public health activities especially when they are set up in tables, cannot be applied to any individual without careful and qualified interpretation.

Individuals do not have exactly the same requirements even if other factors such as age and sex are equal. This is true in all biological measurements. A single figure in a table does *not* state the precise requirement of any individual in the group, except by chance. However, it has a relationship to the requirements of any individual. For example, the requirements found for each individual in a representative sample can be averaged. For any given individual in the population represented it is then possible to say that his requirement has, for example, an even chance or an 88 per cent chance of being within a specified measurement above or below this average. If this distance is small, the indi-

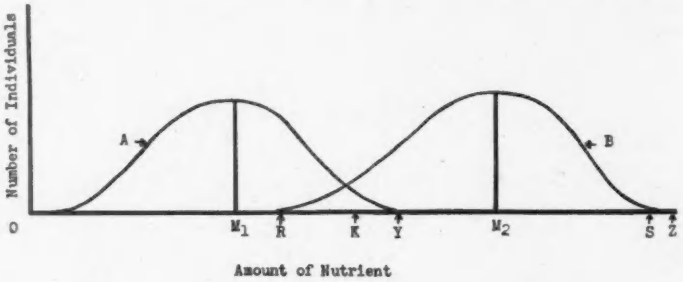

FIGURE 1

Curve A—distribution curve showing variation in individual requirements needed for protection from gross deficiencies. (Sometimes called minimal requirements.)

Curve B—distribution curve showing variation in individual requirements needed to produce "optimal" results.

These curves may or may not overlap, or may even be superimposed. They may be symmetrical or asymmetrical. If asymmetrical with arithmetic scale on abscissa, they possibly could be made symmetrical by using a log scale on abscissa, or some other function of "amount of nutrient."

vidual's requirement is quite well represented by the average. For the population it is possible to say that, for example, two-thirds of them will have requirements within this specified measurement.

Many population studies of one sort or another have been made and experience has shown that if samples are properly taken, reliable estimates of the "true" picture (or population values) may be obtained. Therefore, it is apparent that methods are available by which data may be satisfactorily treated.

The figures are arranged in the form of a frequency distribution, and if the sample is sufficiently large a distribution curve may be obtained (Figure I). The curves in Figure I refer to a hypothetical nutrient; curve *A* defining the distribution of the requirements of a population for that nutrient, the amount being obtained which just prevents each of the individuals represented from showing certain defined signs of a "gross" deficiency for that nutrient. Curve *B* describes the variations in the requirement of the individuals in that population

for the nutrient which permits each individual to attain the maximal benefit possible from it (i.e., an adequate or optimal intake).

If these two distributions were available for each nutrient, it is suggested that the proper basis would be at our disposal on which dietary standards could be set up for any purpose whatever.

It is thus apparent that the problem of arranging and interpreting figures for human requirements is basically statistical, and the best manner of treating the data is to list them in frequency tables, from which distribution curves and probability tables can be derived.

Criteria for judging a "gross" deficiency or an "optimal" state are not lacking even now—e.g., balance methods, excretion following a test dose, growth, gross or microscopic tissue changes—but final answers are not yet possible. Nevertheless it is possible to select some criteria on which it is safe to proceed, particularly if the methods are carefully defined when setting up the standards.

It is proposed that the basic data for dietary standards should be arranged into frequency curves for each nutrient as shown in Figure I, together with certain useful statistics and sufficient explanation in respect to methods of determination of the data employed. Simplified tables for particular uses could be prepared from this material although it would be very important to use all possible means of indicating the proper method of use in order to avoid misunderstandings.

The above suggestion of a basis for dietary standards may be idealistic in that the necessary information does not exist. However, a start has been made (4), and it is suggested that an attempt be made to assemble all available and future information in this way. As for the remainder of the data, it is urgent that research for their elucidation be undertaken. There is justification for spending a good deal of money for this when one considers only the savings possible from greater accuracy and efficiency in providing without exploitation for the real needs of the world's people.

Applications of the Distribution Curves to Various Purposes

Some examples of the possible use of these curves will be considered. For national food supplies (item 1, p. 235) it is suggested that the amount represented by point M_2 be chosen as the one on which to base further calculations, since this point represents the mean requirement for optimal nutrition, and if the distribution of food were ideal, everyone's requirement would be satisfied. Some adjustment of this figure would be necessary to take into account unequal distribution and losses in storage, transportation and cooking. Such a method would be the most economical in its application since one would not attempt to reach levels such as Z, which are quite unnecessary in the application of a dietary standard to calculations of this nature.

In connection with the Food and Drugs Act, a dietary standard is implied when the regulations controlling the sale of vitamin preparations state how much of each vitamin must be present before claims may be made. With curves such as described we would be in an excellent position, having due regard to other possible dietary sources of the vitamin, to set a level below which no mention

of it could be made. We might, for example, select for one vitamin the figure represented by the point *Y*, which would be the amount necessary to prevent gross deficiency in those of the population with the greatest requirement. We could do this for vitamin A, which is available from many other food sources, whereas the amount represented by point *S* could be required for vitamin D which is not often otherwise available in foods.

Purposes 2 and 4, concerned with the dietary status of a group or an individual, are best considered together. A physician might secure from a person an indication of food habits, expressed in terms of intake of this hypothetical nutrient. This would be a point on the horizontal axis of Figure I. From its relationship to the two curves could be estimated the *probability* of the individual's suffering from a serious deficiency or from a suboptimal state of nutrition. The time during which the intake had been at this level would need consideration. Even when these curves are based on specified medical signs, it is still only possible to predict a *likelihood* of finding those signs in any particular individual on examination, although his dietary intake is known. Absence of the signs would suggest that the intake recorded had continued for too short a time, or was not representative of actual food habits, or that the person was in the low requirement section, or some other factor was operating.

For instance, if the intake of an individual is found to be equal to *K*, it can be said that there is a 5 per cent *chance* of a "gross" deficiency, and a 95 per cent chance of suboptimal nutrition, but *not* that he is actually suffering from either. This method of description would be much more useful to medical practitioners than would a single figure in a table. It would be much more scientific than the present practice of adopting some figure such as *Z*, Figure I, and calling an individual (or group) "deficient" who showed an intake of 75 per cent or even 50 per cent of the designated figure.

Medical evidence is necessary before the story is known about any individual. However, if the curves are properly determined it would indeed be possible and correct to estimate *proportions* of the population receiving an insufficient amount of any nutrient. In the case of group studies there would be a different probability for each person of the group, unless of course all individuals fell outside the area under the curve, in which case the probabilities would be 0 or 1 for all.

Finally, in providing actual foods for a group of people, such as persons on relief, where a quantity is issued for each individual, it would be desirable to know the optimal requirement of each member. Since this is usually impossible, the only safe alternative for most nutrients appears to be to provide an amount represented by point *S*, which is the maximum any one may require. The use of amounts represented by points lower on the abscissa, although probably satisfying certain individuals, will result in inadequate diets for others because no redistribution occurs among the individuals in the group.

Summary

It is suggested that data on human requirements for various nutrients should be assembled, as they become available, in frequency tables. From these

may be derived distribution curves representing a whole population provided a proper sample was used. Probability tables could then be prepared indicating that a person with a characteristic nutrient intake has, for example, a 5 per cent or a 95 per cent chance of showing a given set of medical signs. This would be most useful for physicians and others, and would be preferable to the present method of ascribing "deficiency" to anyone with an intake of less than 75 per cent or 50 per cent of an arbitrary figure.

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(1) Leitch, I., *Nutrition Abstracts and Reviews*, 1941-42, *11*: 509.
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Comparison of Observed Intakes and Recommended Allowances of Calories

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SOME criticism of current recommendations for calorie allowances has recently been advanced. The criticism has been derived from studies of intakes calculated from dietary surveys and in all cases the claim has been made that recommended allowances for calories (1) are too great. Youmans *et al* (2) made such a statement in reviewing the evidence from a large study in Tennessee, although no discrepancy was apparent in the case of young children. Winters and Leslie in two small studies on women (3, 4) found extremely low calorie intakes in women from a low-income group, and definitely greater supplies in a moderate-income group. In a detailed analysis of studies on high school pupils in New York, Wiehl (5) compared recorded intakes, calculated energy requirements, and recommended allowances; among her interesting conclusions was the statement that the calorie needs of girls do not apparently alter to any extent from 13 to 18 years, although the recommended allowances decrease 400 calories at age 16. Wiehl has also commented (6) upon the calorie requirements of industrial workers and has said that recommendations for such persons should be reviewed because much factory work does not require a great amount of muscular exertion. The calorie requirements and intakes of young college women have been reviewed by Greenwood and Lonsinger (7), who have concluded that such persons should be considered to be of sedentary occupation. Milam and Anderson (8), in a rural study in North Carolina, found calorie intakes much below recommended allowances and concluded, as did previous workers, that the allowances were too high; they reported a mean intake of 2015 calories for the entire group, regardless of age or sex, giving as one reason for doing so the unique observation that calorie intakes did not alter with age.

Data are available in this laboratory from four dietary surveys carried out on persons in the Toronto area. In each case records of food consumption were obtained from each individual for seven consecutive days. A brief description of the four surveys is as follows:

1. One hundred families (602 persons) having incomes of less than $1500 per year (9).
2. Eighty families (313 persons) having incomes from $1,500 to $2,400 per year (10).
3. A group of 546 adolescent students in a high school (11).
4. A group of 100 young women living together with meals supplied on an institutional basis (unpublished data).

In the first two surveys actual food consumption was weighed but in the third and fourth surveys records of intake were kept by the subjects by describing the portions eaten. In the last two surveys detailed physical examinations were made. It should be noted that all four surveys were made on urban

persons of Anglo-Canadian racial stock and that all individuals could be described as "normal".

It seemed advantageous to compare the calorie intakes observed in all these surveys with current recommended allowances. For this purpose the average calorie intake for each person for the week of study has been used. Data from the four surveys have been assembled, irrespective of source, in age and sex groups similar to those used in "Recommended Allowances"(1). The comparisons are shown in Table I.

An examination of the calorie intakes observed in the Toronto surveys shows that intakes cover wide ranges in all groups of persons except one, that of sedentary women. The comparatively narrow range in this case may be due to the smallness of the group. In all other groups the marked amount of individual variation is evident, although this statement needs further qualifications (see discussion of 13—15 year old girls). However, most of the deviations are smaller than those reported by Wiehl (5).

TABLE I

COMPARISON OF OBSERVED INTAKES AND RECOMMENDED ALLOWANCES OF CALORIES

Type of Person	Number of Observed Persons	Observed Intakes			Recommended Allowance
		Range	Mean	S.D.	
Man—sedentary	56	1512-3223	2456	292	2500
—mod. active	118	1422-4235	2460	463	3000
—very active	14	1830-3514	2607	465	4500
Woman—sedentary	5	1597-1859	1764	117	2100
—mod. active	210	683-2824	1923	437	2500
Children— 1-3	85	624-2237	1080	250	1200
— 4-6	128	906-2377	1405	259	1600
— 7-9	111	800-2644	1719	304	2000
—10-12	90	1161-2828	2005	283	2500
Girls—13-15	194	1254-4381	2441	299	2800
—16-20	167	1556-3225	2337	453	2400
Boys—13-15	208	1163-3894	2788	597	3200
—16-20	94	1106-4034	3072	673	3800
Total number of persons	1480				

Good agreement is evident between the mean observed intake and the recommended allowance for two types of persons: girls 16—20, and sedentary men. For every type of person the mean intake is below the recommended allowance, in some cases markedly so. It is advisable to compare the mean intakes of the present study with those reported by others. Table II shows the various means. Mean intakes for Toronto men are practically the same, regardless of occupation, and are slightly below that reported by Youmans *et al* and definitely less than the mean intake recorded for industrial workers by Wiehl. For women classed as sedentary in Toronto the mean intake is practically the same as that given by Youmans *et al* for women and that reported by Winters and Leslie for women of moderate income but less than the mean found for college women by Greenwood and Lonsinger.

For both men and women it should be noted that classification of activity may be inaccurate, and that erroneous description of activity may be the cause of discrepancies. For example, a man may report his occupation as carpentering and thus be classed as moderately active, but his actual activity may be that of a sedentary person. Mean intakes for children 1—3 and 4—6 as reported by Youmans *et al* are greater than those found in Toronto, but there is good agreement for children 7—9. In the case of children 10—12, the Toronto mean is greater than that observed in Tennessee.

Further consideration of the mean intakes found for the various age groups of children shows an interesting relationship between age and intake, a finding at variance to that reported by Milam and Anderson. Recommended allowances and observed mean intakes for Toronto children have been plotted against age and the results are given in the accompanying figure. Straight-line relationships of allowances and means will be noted, as will the difference in slope of the two relating lines. The mean intakes found for adolescent boys and girls by Youmans

TABLE II

COMPARISON OF OBSERVED MEAN INTAKES OF CALORIES

Type of Person	Youmans *et al*	Other Observations	Toronto
Man—sedentary			2456
—mod. active	2581	(*a*) 2700	2460
Woman—sedentary		(*b*) 2016	1764
—mod. active	1736	(*c*) 1770	1923
Children— 1-3	1210		1080
— 4-6	1547		1405
— 7-9	1726		1719
—10-12	1855		2005
Girls—13-15	1691	(*a*) 2100-2400	2441
—16-20	1975	(*a*) 2000-2300	2337
Boys—13-15	2494	(*a*) 2600-2900	2788
—16-20	2723	(*a*) 2700-3100	3072

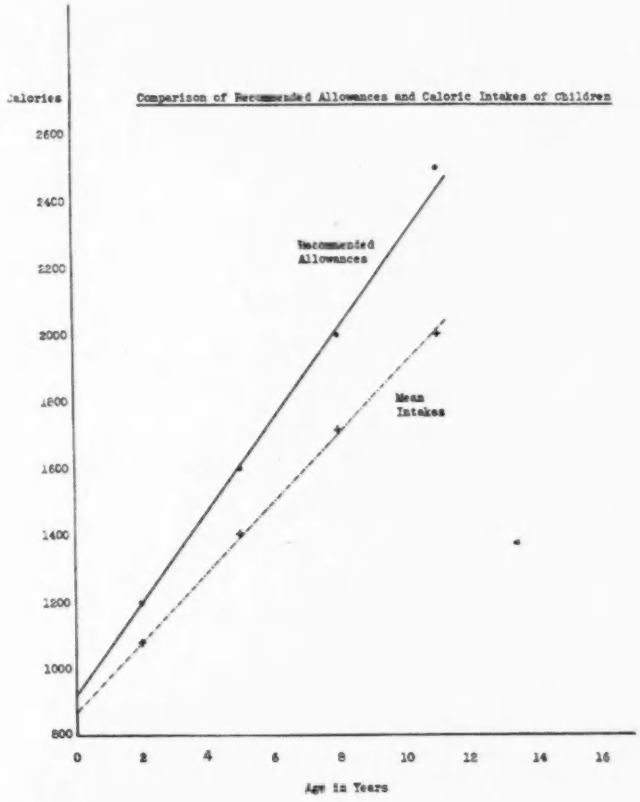
(*a*) Wiehl.
(*b*) Greenwood and Lonsinger.
(*c*) Winters and Leslie.

et al are less than those given by Wiehl and those observed in Toronto, and the latter two show excellent agreement. Examination of the Toronto data for adolescent girls shows that the deviation of the means for the two age groups are not large, considering the number of persons involved. This is particularly true of the group aged 13—15, in which case the size of the group and the small standard deviation render the mean reliable for a discussion of intakes if not of requirements. Moreover, only one girl showed a poor level of health. The Toronto data substantiate the opinion of Wiehl that the calorie requirements of girls are approximately the same from age 13 to 18.

It is questionable whether agreement should be expected between mean observed intakes and recommended allowances. Presumably, recommended allowances are optimal amounts, planned to furnish adequate quantities of

nutrients. Allowances advised at present do not provide for individual variation and it is not clear whether they should be compared with means or with upper limits of ranges. It might be better to compare a recommended allowance with the mean plus the standard deviation, rather than with the mean, since the sum would be the upper limit for two-thirds of every group. On such a basis of comparison, there is good agreement between Toronto data and recommended allowances for seven of the twelve groups shown in Table I.

The statement that recommended allowances are erroneous because they do



not agree with observed intakes is open to several types of criticism. The accuracy of observed intakes is highly questionable. Recent work in this laboratory (Ferguson, Gurland and McHenry: unpublished data) indicates that records for one seven-day period do not give a reliable picture of sustained food habits. It is doubtful, even, that records for one week are reasonably accurate in themselves. Moreover, recommended allowances are presumably intended to be guides to ideal nutrition; one may question, obviously, whether any of the

observed subjects were securing ideal nutrition. This much can be said: In two of the Toronto investigations and in at least three of those to which reference was made, physical examinations were carried out. So far as teen-age girls and boys included in the Toronto groups were concerned, the general level of health was reasonably satisfactory and there was little or no indication that anyone was experiencing a deficiency of calories. We would consequently agree with the suggestion advanced by Wiehl that recommended calorie allowances for girls 13—20 should be reconsidered and that calorie allowances for girls 13—15 and 16—20 might be the same. In so far as other groups are concerned we would agree with other investigators that calorie allowances for women appear to be too high, as do those for adolescent boys. It would seem that present calorie recommendations for children are fairly satisfactory in the youngest age groups but may be somewhat too great for children from 10 to 12 years of age. These opinions are advanced, however, with reservations because of the errors involved in records of food intake.

Summary

Average calorie intakes for seven-day periods have been collected from 1480 individuals of both sexes and of various ages and have been divided into the same age and sex groups as used in current recommended allowances. Mean intakes, and the sum of the mean and standard deviation, have been compared with the allowances. Good agreement between mean intake and allowance was found in two groups only, girls 16—20 and sedentary men. Agreement between the sum of mean and standard deviation and the recommended allowance was observed in seven of twelve groups. Girls 13—15 and 16—20 were found to have similar intakes and not definitely different as provided in the allowances. Possible revisions in recommended allowances are suggested.

This investigation was made possible by a grant from the International Health Division of The Rockefeller Foundation, for which appreciation is expressed.

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Statistics of Racial Origin

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THE COLLECTING of racial origin statistics is a difficult undertaking and there has always been a certain amount of criticism of the results. Nevertheless, there is a widespread demand for such data. Officials in the Bureau have been giving a good deal of thought to this subject in recent weeks with a view to seeing if we could develop an improved procedure which would disarm some of the critics, perhaps remove some enumeration difficulties, and continue to furnish adequate information to the many who are interested in it. We are still in the exploratory stage of our study and since a question on racial origin is included in the certificates issued for births, deaths, and marriages, we should like to have the advice and assistance of the members of this conference on this subject.

It may assist the discussion if a brief general statement on the subject is presented. Let us admit at once that in collecting these statistics we have to face at the outset a great handicap, viz., that of giving a precise definition of racial origin. The following extract from an article by H. P. Fairchild entitled "The Racial Composition of the Population of the United States" presents one point of view concerning this difficulty.

"The noun 'race' and the adjective 'racial' have an exclusive biological connotation, when accurately used. Unfortunately, accuracy in this connection is more conspicuous by its absence than by its presence, not only in the everyday conversation of the layman, and the casual allusions of the non-technical writer, but also in the discussions of many supposedly scientific specialists. Untold confusion of thought and misdirection of policies have already resulted from this situation, and there can be little hope of the establishment of really constructive measures in connection with immigration and other aspects of our great population problem until the true concept of race becomes a part of the working equipment of social scientists and practical politicians. It is particularly important to establish clearly the distinction between race and the entirely different group principle for which there is no better word than nationality.

"A race is a variety of the human species, a sub-group bound together by ties of physical kinship. Persons who are members of the same race have a closer family relationship to each other than they do to members of other races. In other words, the ancestral lines of the members of a single race draw together sooner than do those of separate races. If we go back far enough, of course, the ancestral lines of all human beings coalesce into one common trunk. Racial differentiation, accordingly, is purely a relative matter. There is great difference of opinion and practice, not only among laymen, but also among ethnologists and anthropologists, as to just the point of cleavage between human groups at which the race line shall be drawn, that is to just the degree of particularization which is necessary to constitute a group a race. Thus we speak not only of the great primary divisions of the human species—the white, brown, black, yellow and red,

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to take a common classification—as races, but also the sub-divisions of one or another of these primary groups, as in the case of the white race, the Nordic, Alpine and Mediterranean. We may even go further and apply the term race to the sub-divisions of one of these groups, as the Libyan, Iberian, Ligurian, and Pelasgian section of the Mediterranean race. The confusion arising from this kind of indefiniteness is much less serious than that occasioned by the practice of using the term race to apply to human groupings, and the term racial to designate group traits, which are not biological at all. The habit of using as racial identifications the names of countries or states is peculiarly pernicious. To speak of the English race, the French race, the Italian race, or the American race—God save the mark!—is an abomination."

According to this view our racial origin statistics are open to severe criticism —in the words of the author they are an "abomination," for we do classify groups according to English racial origin, French racial origin, Italian racial origin, etc.! However, we save ourselves to some extent by explaining that by racial origin we do not mean biological origin.

In the Bureau Monograph on "Origin, Birthplace, Nationality and Language of the Canadian People" it states:

"The term 'origin' therefore, as used by the Census, usually has a combined biological, cultural and geographical significance. It suggests whence our people come and the implied biological strain and cultural background. Following popular usage, the terms, 'English stock', 'French stock', 'Italian stock', etc., are employed to describe the sum total of the biological and cultural characteristics which distinguish such groups from others. Such usage is familiar to the public in general, and only when our 'origin' classifications follow such lines, can they be collected by a census, be understood by the people, or have any significance from the practical standpoint of the development of the Canadian Nation."

Thus we do not aim in our racial origin statistics at describing precisely the biological racial origins of our people. That is manifestly impossible, due to the intermixture of biological strains which has taken place through centuries. Rather, we use the racial origin concept in the more popular sense of "racial stock" to obtain a knowledge of ancestry sufficient to give us some clue as to the cultural characteristics and, to a limited extent, physiological characteristics which those who have come to Canada have brought with them. (Indians are said to be susceptible to tuberculosis; some groups are more fertile than others.) The cultural background is the principal interest of these statistics, for it is at the root of many of our sociological and political problems. Some cultural backgrounds are much more capable of assimilation than others. Some move more rapidly in the direction of Canadian unity than others. While we are in the melting pot, even approximately accurate information of this kind is of great importance.

Now, when one looks over our classification of racial origins, one is immediately struck by the fact that the descriptions are, to a large extent, geographical in character. If one thinks of race from a strictly scientific point of view, and recalls the intermixture of peoples which constitute modern nations, the terms "English," "Russian," "Austrian," "Jugo-Slavian," etc., have a much more geographical than strictly racial connotation. Therefore the census monograph previously quoted states that the term "origin," as used by the census, usually has a combined biological, cultural and geographical significance. In our classifications, the two latter greatly predominate. Hence it is obvious that

this mixture of terms does not permit of a precise definition of "racial origin." Because of the fact that the geographical and cultural aspects predominate, and because they are so intimately related, we have been discussing the question as to whether we should not substitute for "racial origin" the term "country of origin." The opprobrium which now attaches to certain race claims, such as the "pure Nordic race," the hatreds which have been aroused and the horrors which have been perpetrated on the basis of race claims in recent years of so-called superior races perhaps indicate a need for serious consideration of this suggestion.

While it is true that it is impossible for us to attain a high degree of precision in the figures which we take of racial origin, from a biological point of view at any rate, it is also true that these statistics are sufficiently accurate to yield a clue to ancestors which is of considerable practical value. We have many evidences of their usefulness.

An analysis of 313 letters received by the Bureau during several months, asking for information on racial origins, revealed the following facts:

Twenty-two were received from so-called national or religious organizations, such as the St. Jean Baptiste Society, the St. David Society, the Jewish Congress, the Grand Orange Lodge, the Catholic Youth Union, the Lebanese Club, etc.

Fifty-five were received from government departments, Federal, Provincial, and municipal. Included were requests from such departments and branches as the War Finance Committee, National War Services, Immigration Branch, Department of Agriculture, City Administrations (mayors or clerks), Youth Training, Colonization, Provincial Departments of Health, the Prime Minister's Office, Department of Justice, Supreme Court, Department of External Affairs, Electoral Officers, Canadian Broadcasting Corporation, International Joint Commission, Department of National Revenue, Department of Labour, Child Welfare Association.

Thirty-five were received from business firms; 11 from newspapers; 36 from Ministers and Members of Parliament (some letters requested a classification of racial origin by electoral districts); 40 from professors and students; 25 from various religious denominations; 9 from various Consulates, Legations and Embassies; 5 from hospitals and sanatoria; and 73 from private individuals.

Our Vital Statistics Branch receives very few requests for racial origin classifications which are to be used in studying ethnological or biological aspects of the population. Special studies are requested at times regarding the incidence of certain specific diseases on certain groups of the population—such as Jews—and their supposed susceptibility to diabetes; and on Chinese, Japanese and Indians in relation to tuberculosis.

Most requests which come to the Vital Statistics Branch are of the administrative type, to be used principally to assess markets for products which are controlled to a certain extent by the cultural tendencies of specific groups in the population.

The racial origin statistics collected in connection with birth, death, and marriage certificates are also valuable in connection with intercensal estimates of racial origin and in checking on the adequacy of census compilations. They provide basic data for the study of intermarriage, infant mortality, and certain aspects of the problem of fertility and natural increase.

It is evident, therefore, that statistics on racial origin have a wide demand

and must fill a real need. If these statistics were not compiled in the Bureau, many estimates would be made, with resulting confusion. Moreover, so long as we have laws, such as the Chinese Immigration Act, or gentlemen's agreements covering Hindu immigration, it is essential that we keep a count of such groups. Again, French-Canadians possess certain definite rights under the Canadian Constitution. In their case, there is a special obligation to record their origin.

There is no doubt that our so-called racial origin statistics do distinguish certain aspects of our population structure which are indispensable for a description of the Canadian people. In spite of the very serious difficulties of definition which are involved, and the ambiguity of the title, they identify groups who have cultural characteristics which make it necessary that the size of such groups be known.

I shall conclude this section of my paper by quoting from pages 34 and 35 of the Census monograph "Racial Origins and Nationality of the Canadian People."

"The male line is used in the census for tracing derivation by racial origin. In this connection the population falls into two main categories: (1) the peoples who because of recent arrival or lack of assimilability have maintained their original purity and (2) those who have intermarried freely for several generations. In the case of those falling within the first category the procedure of the census is obviously satisfactory. In the case of those falling within the second category, however, it might be objected that there are many individuals whose origins are so intermixed through intermarriages that their designation as of the origin indicated by their fathers' patronymics is largely meaningless. This may be accepted as true in so far as the individual is concerned. The fact remains, however, that by the law of large numbers the practice followed in the census will yield approximately accurate measurements of the different infusions of blood that have gone to make up the total.

"The significance of the preceding paragraph becomes clear when one considers in greater detail the purposes for which racial origin data are collected. Apart from purely scientific studies such data have two types of use. First, they have an important bearing on the study of immigration, for they show with what measure of success the newer peoples are mixing with the basic stocks of the country and adapting themselves to Canadian institutions. In the second place, such data have considerable historical interest in recording not only the continuous infusion of foreign blood and foreign cultures from abroad, but the combined effect of natural increase and immigration on the racial origin structure of the population.

"In its bearing upon the problem of immigration, the accuracy of the origin classification varies directly with its importance to public policy. With certain categories of immigrants there is no problem, viz., with such as readily intermarry with the native English and French stock in Canada and are easily assimilated in other respects. The larger the amount of intermarriage the greater is the number, for example, with part English blood who are classified as of Swedish origin and vice versa. As the fusion proceeds the social behaviour of such groups becomes more and more alike. However, even when such peoples have merged biologically and socially, the origin data perform a practical function in tracing the progress of the assimilative process and in finally demonstrating that assimilation has taken place.

"There are other peoples who are less successful in adapting themselves to Canadian social and legal institutions or who because of recent arrival are comparatively unassimilated. The presence of such population elements constitutes a real problem. In many cases much less intermarriage has taken place than is often supposed. It is shown in chapter VII for instance that only about 7 per cent of the married men of southern, eastern and central European origin had married into the

British or French stocks in Canada up to 1931, and less than 6 per cent of the women. Almost all of those classed as of Slavic stock are of Slavic or allied origin, and the origin data for such people may be taken as accurately describing the behaviour of very definite groups in the population. This will continue to be the case until intermarriage has proceeded much further than it has done up to the present.

"The origin data are thus most adequate in the case of groups where accuracy is most desirable, for it is with the groups where intermarriage has made least headway that the progress of assimilation is slow and merits careful attention. The differences established in the various chapters of this report testify to the adequacy of the census procedure in respect to these unassimilated peoples."

At the commencement of the paper, I said that we had been giving this subject a good deal of thought recently, in the hope of introducing some improvements in method. We have been asking ourselves the question: Instead of asking for racial origin, can we get the information on ancestral origin under some other title which is less ambiguous and can be more clearly defined? We have by no means reached finality in our thinking. We are still seeking the assistance of all who are in a position to assist us.

Before we commence the discussion I shall mention some of the suggestions which have been made in our Bureau Committee.

1. It has been suggested that we substitute the title "country of origin" for "racial origin." An objection has been raised to this; viz., that we should lose some information which we want. For example, Ukrainians who came from Russia might report their ancestral line as coming from Russia when we want to know that they are Ukrainians. Country in this case means the country in which the ancestors originated—not necessarily the country from which the immigrant entered Canada.
2. A combination of country of origin and linguistic origin as sub-groups has been suggested. This has been criticized, on the grounds that it would be difficult from the point of view of instructions to enumerators and enumerated.
3. It has been suggested that we simply change the question from racial origin to ancestral origin. This gets rid of the invidious connotation which has become attached to the word "racial" because of the racial ideologies of certain nations in Europe. The term "ancestral" is, perhaps, somewhat less ambiguous than "racial."
4. Another suggestion is that, if possible, an additional question be asked in the census; viz., Was your father's father born in Canada? The introduction of this time element would enable us to differentiate between those whose ancestors have been in Canada for three generations and recent arrivals. It is argued that, say, Germans who have been in Canada for three generations have a different cultural background now as compared with recent arrivals, and they should not all be lumped together in one class.

We understand that you have difficulties with the racial origin question. We should like to hear about those difficulties, and have suggestions, if possible, for overcoming them. I am not here to solve your difficulties. There are some of our officials from the Bureau who have had a good deal to do with racial origin statistics; they may be able to help you in some problems. But we have difficulties, too; and the main purpose of this discussion is to air difficulties and exchange views, in order that perhaps we may, after further study, be able to resolve some of them for the benefit of both Vital Statistics and the Census.

The Sanitary Inspector in an Approved Public Health Service

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WHILE there is nothing in the way of historical evidence to show that the sanitary officer was a defined official in the early years of the present Christian era, it is presumed that the prototype of the present incumbent of this office did have a part to play in the rather sketchy community health organization of that time. He loomed large as a quarantine officer during the 14th, 15th and 16th centuries when epidemics periodically swept the continent of Europe. He apparently was charged not only with the responsibility of ensuring quarantine but also with the instruction of the family in the matter of how best they might be protected from the patient and likewise was charged with the responsibility for carrying out fumigation. It is questionable whether the large self-governing municipalities at that time had officers who were particularly concerned with the matter of nuisance control although there is evidence to show that it was an offence to throw wastes from second-storey windows on to the street. The matter of who carried out the enforcement of this requirement was not noted, however.

For many years enforcement of quarantine was the main responsibility of the sanitary inspector. In epidemic times he went from door to door, supplying whatever in the way of equipment was needed to close up the residence of the affected household. The carrying out of the fumigation of premises after the patient had recovered was a very important part of his job. The major requirement of the fumigating substance was that it should be irritating to the upper respiratory tract; its destructive effect on pathogens was never considered. During the last few years, with the changes in conception as to the method of spread of communicable diseases, less of this type of work has been required of the sanitary officer although even today in some centres he devotes a substantial percentage of his time to the carrying out of this outdated practice of spraying more or less innocuous substances on walls and ceilings in order that the room may be considered free from harmful organisms.

The added responsibility of nuisance control has been a gradual development. Local by-laws were set up which required that people should make due provision for the satisfactory disposal of refuse and it became the job of the sanitary officer to interpret these requirements to the public. In the main he could be nothing more than an enforcement officer and in many instances it was extremely difficult for him to establish that the condition which he was required to correct actually presented a health hazard.

While it is of interest to note that the Public Health Act of the Province of Ontario requires a municipality to appoint a sanitary officer, in only some

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three or four instances is any reference made to what might be considered his statutory obligations. In the statutory by-law it is implied that he shall play a part in its enforcement but the framers of the Act dispose of the matter of assigned duties by stating that he shall assist the medical officer of health and perform such other duties as may from time to time be assigned to him by the local Board of Health or the medical officer of health. In the small urban or rural municipality the part-time sanitary officer often combines the offices of pound-keeper, caretaker of the municipal buildings, etc., with his other official post. He may also be attendance officer or he may be the municipal constable. Few if any of these part-time employees have any special knowledge or training. They are either briefed by the medical officer of health in advance of their attacking any given assignment or use their own judgment as to how best the problem can be solved. The end result is that too much of the time spent is devoted to the ironing out of quarrels between neighbors or in futile attempts to persuade someone who is offending against some of the local legislation to discontinue the practice. It would be of extreme interest if we could know how many times the local health department failed to meet adequately the requirements of a given situation because of hesitancy on the part of the local authorities to dispose of the situation by prosecution of the offender. This failure is due to two reasons: first, the inadequacy of the knowledge possessed by the sanitary officer; and second, the desire to avoid making a lasting enemy of the individual prosecuted. In the larger municipalities a form of specialization has been developed, with the bulk of the staff devoting their entire time to law enforcement.

Up to now the sanitary officer has not engaged in what might be described as prevention but is occupied entirely with the matter of control. He waits until somebody offends against one of the municipal by-laws; then when somebody complains about it he presumes to move in the matter. Few if any of the teaching possibilities of this significant aspect of community health have been explored. However, it is not my intention to elaborate on the inadequacies of the present set-up; they are obvious.

The Department in its planning has attempted to define within very flexible limits the place of the sanitary officer. We have formally subscribed to his participation in the community health program to the point of active participation in those preventive procedures which will be set up in the field of environmental hygiene, and in the field of food control at the local level. His place in communicable disease control still exists, with the shifting of emphasis from law enforcement to education, using the latter term in its broadest sense. He should be prepared to discuss intelligently the validity of the control measure and at the same time promote public interest in carrying out the basic requirement in this field, namely, the earliest possible recognition of a potential case of communicable illness and its immediate isolation.

The Department recognizes the need for special training in its regulatory requirement. Likewise we recognize the fact that this minimum training must of necessity serve only as an introduction and not, as is often implied, the over-all requirement for employment. Any individual who contents himself

with meeting only the didactic requirements of the Certificate in Sanitary Inspection (Canada) is going to find it difficult to meet the implied requirements of this office. Not that he is expected to be an authority in the fields of sanitary science, bacteriology, biometrics, epidemiology and nutrition, nor is it desired that he should be; but he must be sufficiently well informed to discuss the problem of the moment with the individuals concerned. One is inclined, on occasion, to find in this particular field of useful endeavour, as in a number of others, evidence of the applicability of the old adage that "a little knowledge is a dangerous thing".

Here I would like to make specific reference to the subject of in-service training. No health department can continue to function adequately unless all of the people associated with the conduct of the community program are constantly kept advised of new knowledge and new techniques for implementing this knowledge. The administrative officer who neglects to implement a plan designed to meet his own group needs of in-service training is remiss in his obligations.

I might add further that there should be no conflict of thinking between the several groups that are associated with an adequately equipped public health service. Some of these will have professional training; some will be rated merely as technicians; others will be solely engaged in the office end of the program. All must acquire a familiarity with the program as a whole and the place which the particular service that they are equipped to render occupies in such a program. The group engaged in the field of sanitary inspection are not, as far as I am concerned, a professional group. This fact does not lessen their usefulness. I may say, in kindly spirit but without reservation, that much is lost by technical organizations when they attempt to assume, collectively or individually, a status for which they are not presumably academically equipped. This does not imply that I am unsympathetic to the movement which this organization, and other related organizations, have fostered to raise the status of the sanitary officer. Much along this line has been done and I am hopeful that much more can be accomplished. I expect that individuals and groups will develop new methods for doing old tasks more effectively and that these new methods will come from the sanitary officers themselves. I am satisfied that those who are directionally responsible for the conduct of the community program will appreciate the value of such modification and extend credit to their originators.

Many of you are aware of the method of approach to the problem of supplying adequate sanitary supervision now being fostered in the United States. Personally I am not at all sure that this approach is the best one. There is a place for the sanitary engineer who is a university graduate with special training in the field of municipal engineering; there is a place for the veterinarian who has likewise adequately equipped himself for participation in the public health program. There is a well-established place for the sanitary officer who with a good background of general knowledge has met the requirements of the certifying body and who is prepared to add to both his general and special knowledge and to develop appropriate procedures for making himself an essential component of the group to which is designated the responsibility for promoting collective interest in public health and preventive medicine.

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FEDERAL PARTICIPATION IN HEALTH SERVICES

IN RECENT ADDRESSES the Honourable Brooke Claxton, Minister of National Health and Welfare, has presented a definite program of co-ordinated activities which will include increased work in the fields of physical fitness, nutrition, child and maternal hygiene, industrial hygiene, and health education. Beginning in July the first payment of family allowances will be made. The introduction of health insurance is planned. A policy of grants-in-aid to the Provinces has been approved for the purpose of providing assistance for the extension of local health services and for the control and treatment of tuberculosis and the venereal diseases, the prevention and treatment of mental illness, the prevention and control of crippling conditions in children, the training of essential public health personnel, and the furtherance of medical research, particularly as it relates to public health. The implementation of these plans is dependent on arrangements being worked out with the Provinces. The Dominion-Provincial conference which will be convened during the summer will afford an opportunity for full discussion of these and other matters, including the extension of pensions for the blind and possibly a contributory system of old-age insurance to provide more generous pensions at an earlier age than the present age of seventy. The Government is also establishing complete health services for the Federal Civil Servants, including physical examination with chest X-ray on entrance, periodic health examinations, professional personal advice on health matters, and a program of health education.

Announcement has also been made that in order to replace the entirely inadequate laboratory facilities of several divisions of the Department of National Health and Welfare, the Government will provide one million dollars for the construction, at the close of the war, of new quarters for the Laboratory of Hygiene, the Food and Drugs Laboratory, and the Industrial Hygiene Laboratory. The new building will permit not only further co-ordination of the statutory services but also an extension of research. The National Institute of Health in Washington may well be a model for this development in Canada. Serving every State in the Union, it supplements State services and provides solutions to problems in the whole field of preventive medicine. The conduct of research has been the key to its success. Moreover, there exists

an intimate relation to epidemiological problems, and field studies are an important feature of the work of the Institute as part of the United States Public Health Service. The Canadian Public Health Association desires to express its appreciation of the action of the Canadian Government in making provision for the construction of adequate facilities for the laboratory services of the Department of National Health and Welfare, as the Association has long been concerned about the handicaps under which the Federal laboratories have been working.

The Association believes that the Dominion-Provincial Conference will mark the beginning of a period of greatly enlarged health activities in Canada. The Act of Confederation in 1867 gave the Federal Government very limited responsibilities in health matters. The care of the sick and the maintenance of hospitals and charitable institutions were defined as Provincial responsibilities. The limitations thus placed upon the Federal Government, in so far as public health is concerned, have made it difficult for the Government to assist the Provinces in the control of diseases, including treatment measures. Because the venereal diseases were considered, at the close of the last war, to present a special problem, grants-in-aid were made to the Provinces for the treatment of these diseases. The grants were subsequently discontinued, however, although provision was made for the supplying of arsenical drugs used in treatment. The advancement of public health in Canada is dependent upon the redefining of Provincial and Federal responsibilities in health and the granting of financial assistance to make adequate programs possible. Public health workers throughout Canada will follow with keen interest the developments of the next few months.

THE RETIREMENT OF MR. H. M. LANCASTER, CHIEF DOMINION ANALYST

CANADA has one of the best food and drugs administrations of any country. To Mr. H. M. Lancaster, M.A.Sc., who retired last month after twenty-two years of service as Chief Dominion Analyst, is due the credit. Even before he entered the Dominion Service, Mr. Lancaster's career had been intimately related to the Dominion's control of food and drugs. As a member of the Advisory Boards under the Adulteration Act, which served Canada before 1920, he assisted in the preparation of a large number of official standards for foods and was, therefore, well fitted to take over the administration of the Food and Drugs Act in 1923, upon the retirement of Dr. Anthony McGill. In the ten years prior to his Federal appointment, Mr. Lancaster served as Provincial Chemist and later as Director of Laboratories for the Province of Ontario. From 1920 to 1923 he was also Professor of Chemistry at the Royal College of Dental Surgeons, Toronto.

Under Mr. Lancaster's expert direction, the guiding principle of securing the utmost protection for the public against fraud and against practices inimical to health was carefully fostered without disadvantage to the industries concerned. He succeeded in securing the respect and friendship of all those with whom he had to deal, and very seldom, if at all, were his decisions challenged

or found to be faulty. Under his direction the exceedingly competent laboratory and inspection services were further developed and Mr. Lancaster has the satisfaction of knowing that in measures for the control and safeguarding of the sale of food and drugs, Canada has a leading place among the nations of the world.

THE HOSPITAL FOR SICK CHILDREN, TORONTO

THE Hospital for Sick Children, founded in 1875 by the late John Ross Robertson, has won the whole-hearted support of the public and of the medical profession. Although serving primarily the needs of Ontario, it has become a national institution whose influence is felt throughout Canada. Its doors are open to every child in need of care, wherever his home may be, and its doctors share their knowledge and skill with similar institutions in other communities. The clinical staff has been composed of outstanding physicians, many of international reputation, who have generously contributed their time and services. It is closely associated with the Faculty of Medicine, University of Toronto, and serves as one of the leading teaching hospitals. The leadership that Dr. Alan Brown, Physician-in-Chief, has given is well known to those concerned with public health, for the Hospital has not limited its work to the treatment of the sick but has become a great health centre in which the prevention of disease through child-welfare and other clinics has been given prominence. One of the great developments within the Hospital has been in research. Today its research in food and nutrition forms one of the most important departments, the results of studies being shared for the benefit of children everywhere, extending particularly into the homes of the underprivileged. A campaign is now being undertaken to raise $6,000,000 for a new building with enlarged facilities for research, for the advancement of preventive services, and for the treatment of the sick. Public recognition of the magnificent service rendered by the Hospital for the past seventy years should ensure a generous response to this appeal.

News

"Let's Talk about Health"

DURING the week of June 4th many radio stations in Canada presented the first of a series of fifteen-minute round-table discussions or dramatizations dealing with various public health problems. The series, prepared by the Health League of Canada, consists of the following broadcasts:

1. DIPHTHERIA PREVENTION.
2. WHOOPING COUGH.
3. SMALLPOX.
4. VENEREAL DISEASE—from the standpoint of medicine and public health. Principal: Dr. L. P. Ereaux, Professor of Dermatology, McGill University.
5. VENEREAL DISEASE—social and moral aspects. Principals: Dr. L. P. Ereaux and the Rev. W. J. Gallagher, Secretary, Christian Social Council of Canada.
6. ADULT NUTRITION. Principal: Dr. L. B. Pett, Director of Nutrition Services, Department of National Health and Welfare.
7. INDUSTRIAL HEALTH—with emphasis on the workers' viewpoint. Principal: Dr. C. P. Blackler, formerly of the Industrial Hygiene Division, Department of National Health and Welfare.
8. SOCIAL SECURITY—with particular reference to the economic aspects of health. Principals: The Hon. Brooke Claxton, Minister of National Health and Welfare, and Mr. B. K. Sandwell, Editor of *Saturday Night*.
9. PUBLIC HEALTH. Principals: Dr. Donald T. Fraser, Professor of Hygiene and Preventive Medicine, University of Toronto, and Dr. Gordon Bates, General Director of the Health League of Canada.
10. CHILD NUTRITION. Principal: Dr. Alan Brown, Physician-in-Chief, Hospital for Sick Children, Toronto.
11. PASTEURIZATION OF MILK. Principal: Dr. Gordon Bates, General Director, Health League of Canada.
12. NATIONAL HEALTH—with particular reference to its relationship to medical practice. Principals: Major-General G. Brock Chisholm, Deputy Minister of National Health and Welfare, Ottawa; Dr. J. Z. Gillies, President, Academy of Medicine, Toronto; Mrs. N. C. Stephens, President, Local Council of Women, Toronto; and Mr. Walter D. Jones, a director of the Health League of Canada.
13. INDUSTRIAL HEALTH—with particular emphasis on the interest and viewpoint of the employer. Principal: Dr. F. D. Cruickshank, Chairman, Section of Preventive Medicine, Academy of Medicine, Toronto.

Dates and times of these broadcasts will be announced by the stations concerned and in newspaper program listings.

Registration for Family Allowances

THE Department of National Health and Welfare has announced that, to June 18th, 1,234,202 families had registered for the family allowance payments. Ontario had the greatest number of families registered, 390,631, while Quebec was second with 357,500 and Saskatchewan was third with 94,785. Registrations in the other Provinces were: Alberta, 91,839; British Columbia, 88,411; Manitoba, 78,494; Nova Scotia, 66,443; New Brunswick, 54,395; and Prince Edward Island, 11,704. An average of 2,100 applications is being received daily by each of the nine Provincial Regional Allowances Offices. Registrations received before the end of June will, if approved, entitle the applicants to the first allowance payment, which will be made early in July.

Retirement of Mr. H. M. Lancaster, Chief Dominion Analyst

AT an interesting function held in the Food and Drugs Laboratories, Ottawa, on May 23, the Honourable Brooke Claxton made a presentation, on behalf of the staff of the Department of National Health and Welfare, to Mr. H. M. Lancaster on the occasion of his retirement as Chief Dominion Analyst. The Honourable Mr. Claxton paid tribute to Mr. Lancaster's wide knowledge and experience in food and drug administration, pointing out that the Canadian Act and its administration are of the highest order and equalled in few countries. The Minister expressed his belief that the projected National Health Labortory might be regarded as a crowning achievement of Mr. Lancaster's public career. He supposed that many people had never heard of the Chief Dominion Analyst, but that was a tribute to the quiet efficiency with which his work and that of officers and employees under him had been done. If it had not been good, Mr. Lancaster would have been one of the most notorious characters in Canada. "The absence of public clamour is one measure of of the success of the public servant. Mr. Lancaster is leaving us after a lifetime of

useful service to the Government and the people of Canada. It is men like him who have established the reputation of the Department for integrity."

British Columbia

A MEETING of the British Columbia Branch of the Canadian Institute of Sanitary Inspectors was held in the Devonshire Hotel, Vancouver, on April 7 under the presidency of Mr. George A. Rogers, Chief Sanitary Inspector of Vancouver. Thirty-five members were in attendance. Mr. Reginald Bowering, Provincial Sanitary Engineer, addressed the meeting on "How the Sanitary Inspector May Improve His Standing," suggesting that every inspector should continue his studies and do everything possible to improve the public health even beyond what is required in the fulfilment of his employment. At the dinner session Dr. C. E. Dolman and Professor G. Spencer were guest speakers.

Among the matters discussed was the desirability of instituting an insurance, pension or endowment plan for sanitary inspectors to which both employer and employee would contribute. It was suggested that the name of the Institute should be changed, since it was thought that past associations connected with the term "sanitary inspector" did not represent the modern inspector. The word "sanitarian" was, it was felt, more satisfactory. While the meeting agreed that the suggested change was desirable, the matter was referred for further consideration. The desirability of lay meat inspectors being required to hold the Certificate in Sanitary Inspection (Canada) was again stressed. Compulsory pasteurization of all milk supplies in the Province was endorsed; and it was recommended that future subdivisions of land in organized municipalities should be laid out in lots not less than 50 by 120 feet and that where private dwellings (one family) are constructed not more than one-third of the area should be built upon.

Saskatchewan

IN THE BUDGET, recently passed, covering the fiscal year May 1945 to April 1946, the Provincial Treasurer included an amount of $1,100,000 as a "start in plans for socialized health services." Provision was made to increase old-age pensions from $25 to $28 a month, and mothers' allowances were increased $10 a month. Three hundred thousand dollars were voted for the construction of a mental institution and $100,000 for the establishing of a faculty of medicine in the University of Saskatchewan.

IN 1933 SASKATCHEWAN became the first province to require from male applicants for marriage licenses a certificate of freedom from communicable disease in a communicable state. In 1941 the legislation was amended to include women who were about to wed. At the 1945 session of the Legislative Assembly The Marriage Act was again amended to provide for serological tests for syphilis of both parties within a month before marriage. This legislation has been assented to and it is expected that the Act will be proclaimed this year. Meanwhile, further education of the public is being undertaken.

SIX HUNDRED SCHOOLS have entered the Saskatchewan Recreational Movement, which is sponsored by the Division of Physical Fitness and Recreation under Dr. J. B. Kirkpatrick, physical fitness director, and G. C. Darby, administrative director. Some four hundred communities have organized recreation programs. One of the most interesting physical fitness groups is that in the Regina Provincial Jail, which has about seventy inmate members. The jail class is one of a program of health education introduced in the correctional institutions conducted by the Province.

THE HON. T. C. DOUGLAS, M.A., Premier and Minister of Public Health, returned recently from a visit to Saskatchewan's fighting men in Europe. In his absence the Hon. O. W. Valleau, Minister of Social Welfare, was Acting Minister of Public Health.

Manitoba

SQUADRON LEADER Roper Cadham has been appointed Deputy Medical Health Officer for the City of Winnipeg. After graduation from the Manitoba Medical College, Dr. Cadham obtained the Diploma in Public Health from the School of Hygiene, University of Toronto, and joined the R.C.A.F. in 1940. After service overseas, he returned to Canada and has been Hygiene Officer for No. 2 Command, Winnipeg. He is the son of Dr. Fred Cadham, Provincial Bacteriologist in the Manitoba Department of Health and Public Welfare.

Dr. Cadham's duties will include the super-

vision of epidemiology, medical relief, and institutions such as the homes for the aged and infirm. His appointment has been confirmed by the City Council and will be effective immediately on his release from the R.C.A.F.

DR. ELIZABETH LAUTSCH has joined the Manitoba Department of Health and Public Welfare as Director of Maternal and Child Health and provincial consultant in these fields. Dr. Lautsch is a graduate of the University of Manitoba (B.A. 1940) and Laval University (M.D. 1944), and chose paediatrics and obstetrics as her fields of special study during her interneship at Hôtel Dieu and Misericordia Hospital in Quebec City. She acted as medical secretary to the Manitoba Cancer Inquiry Commission from October 1944 to May 1945.

DR. WALLACE GRANT, graduate of the University of Manitoba, 1944, has been appointed resident junior physician at the Winnipeg Psychopathic Hospital. He has completed one year's interneship at the Winnipeg General Hospital, one year as resident physician at the Children's Hospital, Winnipeg, and a two months' visit to the Paediatric Department of the University Hospital, Minneapolis. Dr. Grant is especially interested in the field of paediatric psychiatry.

Deaths

JOHN MCCOMBE, M.D., M.R.C.S., L.R.C.P., Chief Medical Officer of the Canadian National Railways until his retirement in 1943, died at his home in Dorval, Quebec, on June 11. Dr. McCombe, a graduate of McGill University, served with distinction in the first world war. After a period as chief inspector of hospitals for the Department of Soldiers Civil Re-establishment, during which he acted as consultant in industrial medicine and hygiene for various companies, he joined the Canadian National Railways, becoming chief medical officer in 1928.

LIONEL MCIVOR HEATH, V.S., D.V.Sc., retired Animal Pathologist of the Dominion Department of Agriculture, died in Victoria on May 30. Dr. Heath was in charge of the research station of the Health of Animals Branch at Lethbridge for many years, and was transferred to the Animal Diseases Research Institute at Hull in 1939.

JOURNALS NEEDED

The Association requires copies of the following issues to complete its files:

1913, vol. 4, nos. 1, 5, 12
1914, vol. 5, nos. 1, 6-12
1915, vol. 6, nos. 1, 4, 11
1916, vol. 7, nos. 1, 5, 12
1917, vol. 8, nos. 2, 9
1918, vol. 9, no. 11
1919, vol. 10, nos. 8, 10, 12
1920, vol. 11, nos. 2, 3, 5, 7, 10, 11
1924, vol. 15, no. 9
1926, vol. 17, nos. 1, 2

It will be appreciated if subscribers will report any of the numbers which may be available. Address the Circulation Department, Canadian Public Health Association, 150 College Street, Toronto 5.

Books

The 1944 Year Book of General Medicine. Edited by George F. Dick, M.D.; J. Burns Amberson, M.D.; George R. Minot, M.D., S.D., F.R.C.P.; William B. Castle, M.D., S.M.; William D. Stroud, M.D., and George B. Eusterman, M.D. Chicago: The Year Book Publishers Incorporated, 1944. 768 pages. $3.50 (U.S. funds).

THE esteem which The Year Book of General Medicine enjoys is apparent in the fact that "it is the most widely distributed medical volume in the English language." This gives at least some measure of its worth in the opinion of the profession. The 1944 edition is no exception to the previous high standard. It contains 484 abstracts of articles from a wide range of publications and in no other way could the trend of thought in the world's medical literature be made available to all physicians. In the great majority of instances the topics considered are timely and well chosen. This is particularly true in regard to penicillin, to which some nine pages are devoted. Again, this may be illustrated by the section dealing with the common cold in which are abstracted articles dealing with the use of vaccines, vitamins and chemotherapeutic agents. The material presented is controversial and the editorial comments are most salutary.

Other matters of current interest found in this volume which illustrate the diversity of its coverage are exemplified by reference to the Rh factor, resuscitation of the drowned by the rocking (Eve) method, diarrhoeal diseases, and tropical diseases among returned servicemen. This service of keeping the medical profession abreast of new subjects and of new developments in old fields is most commendable.

F. O. Wishart

The Public Health Nurse in the Community. By Clara B. Rue, R.N., B.S., Associate Director, Visiting Nurse Association of Milwaukee; formerly Director, Program of Study in Public Health Nursing, Duquesne University, Pittsburgh. Philadelphia: W. B. Saunders Company, 1944. Canadian agents: McAinsh & Co., Limited, Toronto. 283 pages. $3.00.

IT is evident that the author's theoretical knowledge of public health nursing has been strengthened by a good deal of practical field experience, and this text will be equally helpful to the public health nurse working with the official or non-official health agency. Medical officers of health will find interesting the presentation of local health problems. This book also contains helpful information for board members, social workers, lay committee members, teachers, industrial nurses, and nursing school personnel.

Organization and administration in public health nursing are clearly outlined; attention is focused on community problems as they affect various types of illnesses. Each phase of a generalized program is discussed in a practical manner, and in the chapters dealing with cardiac illness, cancer and diabetes, the public health nurse will find her responsibility to the patient and family in these cases clarified. Miss Rue points out that, with increased expectancy of life, health workers are faced with the need for a more intensive service to adults.

Three chapters are given to co-operation between various groups. While this makes for considerable overlapping, the young nurse, not experienced in sorting out what she needs, will appreciate this arrangement.

Throughout the book the need for more nursing in public health services is emphasized. A warning note to public health nurses is sounded with reference to safeguarding the humanitarian motive which inspired increasing scientific discoveries. Much study will be necessary if the public health nurse is to keep pace with the constantly changing scientific health information and how it can be intelligently and practically applied in her programs.

While the work of the public health nurse is generally demanding, Miss Rue recognizes the need for outside interests and recreation and for a salary commensurate with the responsibility carried.

N. Edna Howey

Malaria: Its Diagnosis, Treatment and Prophylaxis. By William H. Bispham, M.D., Colonel, U.S. Army Medical Corps. Baltimore: The Williams & Wilkins Co., 1944. 197 pages. $3.50 (U.S. funds).

THIS book gives sound and up-to-date knowledge of the clinical features of malarial problems. History of malaria, geographic distribution, etiology, epidemiology, sympto-

matology, complications, diagnosis, pathology, treatment, and prevention are well and clearly discussed. Coloured plates of the malarial parasites should be helpful in diagnosis. Another coloured plate represents the malarial cycle in man and mosquito. A special chapter on prevention and treatment of malaria in West Africa in recent years has been contributed by Dr. L. T. Coggeshall, Chairman of the Department of Tropical Diseases, School of Public Health, University of Michigan. Most of the chapters in the book have been reviewed before publication by twelve distinguished experts in their respective fields. The book is highly recommended to physicians, medical students and others interested in practical knowledge of malaria.

E. Kuitunen

Techniques of Supervision in Public Health Nursing. By Ruth B. Freeman, B.S., M.A., Associate Professor of Preventive Medicine and Public Health and Director of the Course in Public Health Nursing, University of Minnesota. Philadelphia: W. B. Saunders Company, 1944. Canadian agents: McAinsh & Co. Limited, Toronto. 411 pages. $3.25.

An important contribution to public health, this manual supplements the pioneer book, "Supervision in Public Health Nursing," by Violet Hodgson, which emphasizes the philosophy underlying good supervisory practice. Covering almost every phase of supervision, Miss Freeman attempts to guide the supervisor in meeting a variety of situations which were formerly met by trial and error. She also clearly indicates that supervision is much more than a matter of techniques; it is an art, with countless opportunities for the nurse with creative ability, vision and interest in people, as well as a very thorough understanding of the public health field.

Administrators as well as supervisors in public health and allied fields of nursing will find much of timely interest and value. Whether the administrator is in need of sound arguments to support his plea for a supervisory nurse, or an extra supervisor in an expanding program, he will find much to aid him.

In discussing the supervisory program, the author stresses the importance of good planning as a basis for sound organization, the possibility of foreseeing certain obstacles and anticipating them, and the need for staff participation in helping to outline objectives and policies as well as in measuring results.

The author stresses the increasing importance of the individual conference as a means of developing good relationships and an understanding staff, the necessity for preparation, privacy and co-operative planning in making the conference effective; and some emotional and personal factors which may complicate it.

Certain questions are raised regarding the always challenging phase of supervision in the field, its cost and value, its advantages and disadvantages.

Excellent suggestions to meet the needs of the individual nurse and of the group for continued learning are given. "If the staff education program is to produce results it must be more than a series of desultory or unrelated lectures if professional competence is to be maintained at a high level," and even with good pre-employment education and experience, continuous staff education is a necessity. Throughout, staff initiative is strongly advocated; however, the need for guidance by the supervisor, based on the known needs of staff and community, is not lost sight of.

Even in so apparently complete a book, certain omissions are likely to occur. One misses the use of supervisors' group conferences as a medium for personal and group development, for participation in organization policies, and clarification of current issues. It would also have been of value to include the supervisor's relationship and responsibilities to her local boards and committees. Although the author stresses participation of the staff throughout, there is no reference to a staff council through which the needs and ideas of of the larger staff group are made known.

A. G. Nicolle